

**AMENDMENTS TO THE CLAIMS**

Please **AMEND** claims 1-12 as shown below.

Please **ADD** claims 13-18 as shown below.

The following is a complete list of all claims in this application.

**What is claimed is:**

1. (Amended) An activated ~~semi-crystalline, largely isotropic, coal-based~~ carbon foam,  
comprising:  
said activated carbon foam produced from particulate coal exhibiting a  
free swell index ~~of between~~ ranging from about 3.5 ~~and to~~ about 5.0 ~~and of a~~  
~~small diameter, wherein said activated carbon foam having has~~ a density ranging  
from ~~of between about~~ 0.1 ~~and to~~ about 0.8 g/cm<sup>3</sup>; and  
wherein said activated foam has an overall surface area of between  
ranging from about 10 m<sup>2</sup>/g ~~and to~~ about 25 m<sup>2</sup>/g.
2. (Amended) The activated ~~coal-based~~ carbon foam of claim 1, ~~wherein having an said~~  
overall surface area ~~of~~ ranging from ~~between~~ about 15 m<sup>2</sup>/g ~~and to~~ about 20 m<sup>2</sup>/g.
3. (Amended) The activated ~~coal-based~~ carbon foam of claim 1, wherein said particulate  
coal exhibits a free swell index ~~of between~~ ranging from about 3.75 ~~and to~~ about  
4.5.

4. (Amended) The activated ~~coal-based~~ carbon foam of claim 3, wherein said having an  
overall surface area ~~of between~~ ranging from about 15 m<sup>2</sup>/g ~~and to~~ about 20 m<sup>2</sup>/g.
5. (Amended) The activated ~~coal-based~~ carbon foam of claim 1, wherein said ~~coal-based~~  
activated carbon foam ~~has is~~ been calcined.
6. (Amended) The activated ~~coal-based~~ carbon foam of claim 1, wherein said ~~coal-based~~  
activated carbon foam ~~has been is~~ graphitized.
7. (Amended) A monolithic activated carbon filter element, comprising:  
  
an activated ~~semi-crystalline, largely isotropic, coal-based~~ carbon foam  
produced from particulate coal exhibiting a free swell index ~~of between~~ ranging  
from about 3.5 ~~and to~~ about 5.0 ~~and of a small diameter, wherein said activated~~  
carbon foam has having a density ~~of between~~ ranging from about 0.1 ~~and to~~ about  
0.8 g/cm<sup>3</sup> and an overall surface area ~~of between~~ ranging from about 10 m<sup>2</sup>/g ~~and~~  
to about 25 m<sup>2</sup>/g.
8. (Amended) The monolithic activated carbon filter element of claim 7, wherein said  
activated carbon form having had an overall surface area ~~of between~~ ranging from  
about 15 m<sup>2</sup>/g ~~and to~~ about 20 m<sup>2</sup>/g.

9. (Amended) The monolithic activated carbon filter element of claim 7, wherein said particulate coal exhibits a free swell index ~~of between~~ ranging from about 3.75 ~~and to~~ about 4.5.
10. (Amended) The monolithic activated carbon filter element of claim 9, wherein said carbon foam ~~having~~ has an overall surface area ~~of between~~ ranging from about 15 m<sup>2</sup>/g ~~and to~~ about 20 m<sup>2</sup>/g.
11. (Amended) The monolithic activated carbon filter element of claim 7, wherein said ~~coal-based carbon foam has been~~ is calcined.
12. (Amended) The monolithic activated carbon filter element of claim 7, wherein said ~~coal-based carbon foam has been~~ is graphitized.
13. (New) A method of forming activated carbon foam, comprising:
- heating swellable particulate coal in a mold to a first temperature ranging from about 300° C to about 700° C under a non-oxidizing atmosphere at a pressure ranging from about 25 psi to about 500 psi;
  - holding at the first temperature ranging from about 10 min. to about 12 hours;
  - controllably cooling heated swellable particulate after holding at said first temperature to a second temperature below about 100° C to form a carbon foam having a first overall surface area;

activating carbon foam by flowing an activation agent into the mold at a second temperature for increasing the first overall surface area ranging from about  $10 \text{ m}^2/\text{g}$  to about  $25 \text{ m}^2/\text{g}$ .

14. (New) The method of forming activated carbon foam of claim 13, further comprising:

carbonizing the carbon foam having a first overall surface area to form a carbonized foam by heating to a second temperature ranging from about  $600^\circ \text{C}$  to about  $1600^\circ \text{C}$  in an inert atmosphere and holding at the second temperature for a period of time ranging from about 1 hour to about 3 hours.

15. (New) The method of forming activated carbon foam of claim 14, further comprising:

graphitizing said carbonized foam by heating said carbonized ofam to a fourth temperature ranging from about  $170^\circ \text{C}$  to about  $3000^\circ \text{C}$  in an inert atmosphere and holding at the third temperature for a period of time less than about 1 hour.

16. (New) The method of forming activated carbon foam of claim 14, wherein said swellable particulate coal exhibits a free swell index ranging from about 3.75 to about 4.5.

17. (New) The method of forming activated carbon foam of claim 14, wherein said activation agent includes carbon dioxide (CO<sub>2</sub>).

18. (New) The method of forming activated carbon foam of claim 14, wherein said activation agent includes ozone (O<sub>3</sub>).